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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/531,998

12/21/2005

Carina Onneby

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EXAMINER

CHIN, HUI H

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/531,998	<b>Applicant(s)</b> ONNEBY ET AL.	
	<b>Examiner</b> HUI CHIN	<b>Art Unit</b> 1796	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 March 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2 and 4-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/22/2010</u> .   | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. The office action is in reference to the Amendment, filed on 3/22/2010.  
Claims 1, 12 and 13 have been amended and claim 3 has been canceled. Claims 1-2 and 4-31 are now pending.
2. In view of the Response, the previous rejection of claims 1-12, 14-28 and 30-31 under 35 U.S.C. 102(b) as being anticipated by Yadav et al. (US Patent 6,228,904), and claims 13 and 29 under 35 U.S.C. 103(a) as being unpatentable over Yadav et al. (US Patent 6,228,904) in view of Bernhoff et al. (US 2002/0070428) are withdrawn.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2 and 4-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bernhoff et al. (US 2002/0070428) in view of Yadav et al. (US Patent 6,228,904).

Bernhoff et al. disclose a semiconductive device comprising a field grading material, wherein the material comprises a polymer based material filled with particles of BaTiO<sub>3</sub>, TiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, MgO, ZnO or SiC, wherein the particles having a size of 1-100 nm

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and claimed energy bandgap since these particles are essentially the same particles as in the instant application (abstract, claim 17, [0037], and [0038]).

However, Bernhoff et al. is silent on the specific amount of the particles.

Yadav et al. disclose a composite material comprising a polymer matrix material and a nanostructured filler in powder form having a domain size of less than about 100 nanometers, wherein the volume % of filler is from 20-80 to provide the use of nanoscale powders as a component of novel composites and devices with unique properties such as resistivity, breakdown voltage, band gap, and thermal conductivity ((claim 1, Table 1, col. 1, lines 17-21, 56-62). In light of such benefit, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use this specific amount of particles in the composition with the expected success.

The limitations of claim 2 can be found in Bernhoff et al. at paragraph [0038], where it discloses particles having a size of 1-100 nm.

The limitations of claim 4 can be found in Bernhoff et al. at claim 17 and paragraph [0036], where it discloses particles of SiC which is essentially the same particles as in the instant application.

The limitations of claims 5-8 and 18-25 can be found in Bernhoff et al. at claim 17, where it discloses the composition of grading material. Bernhoff's composition would result in substantially the same properties since these particles are essentially the same particles as in the instant application.

. The limitations of claims 10-11 and 28 can be found in Bernhoff et al. at claim 17, where it discloses the EPDM rubber.

The limitations of claim 12 can be found in Bernhoff et al. at claim 17, where it discloses the device.

The limitations of claim 13 can be found in Bernhoff et al. at paragraphs [0003] and [0041], where it discloses the method for grading an electric field at high power cable terminal.

The limitations of claims 14-15 can be found in Bernhoff et al. at paragraph [0038], where it discloses particles having a size of 1-100 nm.

The limitations of claims 16 and 17 can be found in Bernhoff et al. at claim 17 and paragraph [0036], where it discloses particles of BaTiO<sub>3</sub>, TiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, MgO, ZnO or SiC.

The limitations of claim 29 can be found in Bernhoff et al. at [0041], where it discloses the device.

### ***Response to Arguments***

5. Applicants' arguments filed 3/22/2010 have been fully considered and are not persuasive.

Applicants had stated "Yadev et al. does not include any disclosure of how to obtain an increased electrical breakdown strength of a field grading material such that it can be used at high-voltage applications." Bernhoff et al. disclose a semiconductor device for grading an electric field when a high voltage is applied (abstract).

Applicants had stated "Yadev et al. only discloses one example of an electric device using a nanocomposite in Example 5. The nanocomposite in Example 5 includes

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a zinc oxide matrix with a nanofiller. In other words, Yadev et al. does not disclose a polymeric matrix as in the claimed invention.” Bernhoff et al. disclose polymeric materials filled with particles such as SiC or ZnO (paragraph [0037]).

Applicants also stated “The combination of Yadev et al. and Bernhoff et al. does not suggest the invention recited in claims 13 and 29 since, among other things, Bernhoff et al. does not overcome the above discussed deficiencies of Yadev et al. For example, Bernhoff et al. does not suggest a composite material for grading an electric field in high voltage applications, a filler that includes a resistive and/or capacitive field grading effective amount of particles, particles that have an energy bandgap larger than 0 eV and smaller than 5 eV, or how to obtain an increased electrical breakdown strength of a field grading material such that the material can be used at high-voltage applications.” Both Bernhoff et al. and Yadev et al. disclose particles such as TiO<sub>2</sub> and SiC which have an energy bandgap between 0 and 5 eV and these particles are essentially the same particles as in the instant application.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUI CHIN whose telephone number is (571)270-7350. The examiner can normally be reached on Monday to Friday; 8:00am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ling-Siu Choi/  
Primary Examiner, Art Unit 1796

/HC/

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